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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,036

11/14/2005

Outi Aho

Lain-099

4022

20374 7590 02/05/2009

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EXAMINER

VETERE, ROBERT A

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

02/05/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/551,036	<b>Applicant(s)</b> AHO ET AL.	
	<b>Examiner</b> ROBERT VETERE	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/05</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Examiner's Comment*

A preliminary amendment, amending claims 3, 5, and 9-16, was received on 9/27/05.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation that the fibres are "separate and loose." However, claim 1, from which claim 11 depends, already contains this limitation.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn et al. (US 5,030,508).

**Claims 1, 3-4, 11 and 13:** Kuhn teaches a method of producing a composition comprising the steps of: adding a first component comprising individual natural fibers (claimed loose and separate vegetable fibres) (Abst.; 8:29-47) to an aqueous mixture comprising paratoluene sulphonic acid and aniline (9:30-51) and allowing the aniline monomer to form electrically conductive polyaniline (see, e.g., 5:53-63 and Abst.) wherein the polymer is so firmly attached to the fibers that it cannot be washed out with water (9:30-51) and the product is dried (9:30-51).

With respect to the order of mixing the materials, the selection of any order of mixing ingredients is prima facie obvious. *In Re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930). Therefore, it would have

Art Unit: 1792

been obvious to one of ordinary skill in the art at the time the invention was made to have introduced the aniline monomer after the sulphonic acid.

**Claims 2 and 10:** Kuhn teaches the same steps as the currently claimed invention, therefore, it is inherent that the reaction between the paratoluene sulphonic acid and aniline in the method of Kuhn will form a salt or complex prior to polymerization and that the final product will have a maximum weight of 10% of the polymer which is out-washable at a pH of 7 and a temperature of 25°C.

**Claim 12:** Kuhn also teaches that the pH of the solution is kept around 2, but may be further controlled in order to control the deposition and polymerization rates (6:38-48). "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 105 USPQ 233, 235 (CCPA 1955). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a pH range of 2-3 in order to optimize the deposition and polymerization rates in the method of Kuhn with the predictable expectation of success.

5. Claims 5-9 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn in light of Beghello et al. (US 2002/0112833) and further in light of Hulit et al. (US 4,309,246).

**Claims 5-6, 9 and 14-15:** Kuhn fails to teach that the natural fibers are chemical cellulosic pulp. Beghello teaches a method of producing paper by coating cellulose fibers with conductive polymers such as polyaniline without intermediate drying (¶¶ 0017, 0020). The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, because Kuhn doesn't limit the types of natural fibers which can be used and because Beghello teaches that cellulose fibers can be used as a substrate for coatings of conductive polyaniline, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used cellulose fibers as the natural fibers in the method of Kuhn with the predictable expectation of success.

While Beghello teaches the use of cellulose fibers in the production of paper, it fails to teach what types of cellulose fibers are used. Hulit teaches a method of producing paper using lignocellulosic fibers (claimed "chemical cellulosic fibres") (Abst.). The selection of a known material based on its suitability for

Art Unit: 1792

its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected lignocellulosic fibers as the type of cellulose fibers used in the combined method of Kuhn and Beghello.

The combined method of Kuhn, Beghello and Hult teaches the same materials and same steps as claim 5. Therefore, it is inherent that the combined method would form aliphatic hydrocarbon structures on the fiber surface which will react with the aromatic hydrocarbon structures present in the sulphonic acid.

**Claims 7-8:** Kuhn also teaches that the polyaniline can be doped with another material (6:3-20).

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn and Beghello in light of Nitta et al. (US 6,519,137).

**Claim 16:** Kuhn fails to teach that the sulphonic acid is dodecyl benzene sulphonic acid. Nitta, however, teaches that dodecyl benzene sulphonic acid can be used in the place of paratoluene sulphonic acid to polymerize aniline (1:43-57). The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted dodecyl benzene sulphonic acid for paratoluene sulphonic acid in the combined method of Kuhn and Beghello.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT VETERE whose telephone number is (571)270-1864. The examiner can normally be reached on Mon-Fri 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1792

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Vetere/  
Examiner, Art Unit 1792

/Michael Cleveland/  
Supervisory Patent Examiner, Art Unit 1792